

Looking at Group Work in Asynchronous Online Courses

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Why do group projects?

- Because collaboration is known to help learning.
- Because it is a skill needed in the workplace.
- iNACOL Standards for Quality Online Courses, under Instructional Design:
 - “The course provides multiple opportunities for students to be actively engaged in the content that includes meaningful and authentic learning experiences such as collaborative learning groups ...”
- iNACOL Standards for Quality Online Teaching:
 - “The teacher plans, designs and incorporates strategies to encourage active learning, interaction, participation and collaboration in the online environment.”
- Two elements in that standard:
 - Engage students in “team problem-solving”
 - Promote learning through group interaction

Goals of this research

- To look at groups working online and ask:
 - Question 1: How do **groups manage themselves** in an online environment?
 - Question 2: How is **knowledge collectively built**? How do groups establish common frames of reference, resolve discrepancies in understanding, and come to a joint understanding?
 - Question 3: What do such 21st-century skills as **critical thinking and teamwork** look like in online environment?
- To take analytical approaches from f2f group work and see how/if they adapt to analyzing group work online
- To **contribute to the design** of online learning that leads to high levels of engagement and critical thinking

Analytical framework

Three types of collaboration

Two instructional design models

Three types of collaboration

■ Parallel

- No monitoring of others' contributions
- No interchange of ideas
- Final product is a cumulation of individual contributions



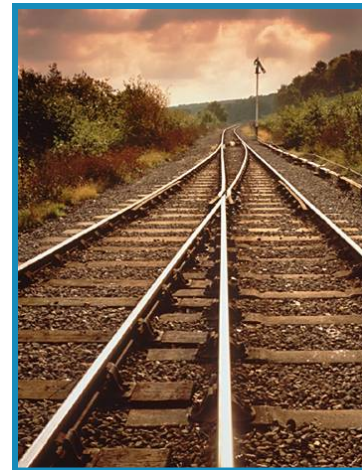
■ Associative

- Some monitoring of others' contributions
- Some interchange of ideas
- Final product is still a cumulation of individual contributions



■ Collaborative

- Monitoring of others' contributions
- Interchange of ideas
- Final project jointly created



Two instructional design models

- **Cumulative**

- Tasks can be simultaneous
- No need for interaction
- No coordination necessary



- **Jigsaw**

- Tasks can be simultaneous or sequential
- Each student works on one piece
- All the pieces are needed to create the whole



BUT some jigsaw projects are really coordinated cumulative projects

2009 study: How do groups manage themselves in an online environment?

DATA

- Four sections of an Economics course
- Prompt: Three questions, each on a different aspect of the same topic, each with five sub-questions, plus one summative question, to be done as a team activity.
- Students were to jointly create a document with the answers.
- Data source: Discussion forum.

FINDINGS

- In every case, they split the questions and sub-questions.
- Results were therefore Cumulative.
- Analysis focused on how the groups organized themselves.

Implications for instructional designers

- If students can take a project apart, they do.
- In this case, the designer believed the activity necessitated synergistic collaboration, **BUT** the students were able to (and did) use a parallel or (at best) an associative style.
- If designers want group projects to be synergistic, they need to design them so that the problem-solving style **cannot be parallel**.
- If students are really to hash out things together, they need time, so group projects should last more than a week but should be **scaffolded** so that the students don't wait until the last minute to do the work.

2011 Study: How is knowledge collectively built?

DATA

- 7 groups in two sections of a Psychology course.
- Groups were 3-4 members.
- In 4 of 7 groups, at least one member went missing.
- They used a discussion forum to get going and Google Presentations to create the final product.
- Chose to analyze the two most highly rated by the teacher, one from each section. (Note that the grading rubric says nothing about collaboration.)
- Data sources: Discussion forum and final product.

PROMPT

- Brainstorm (in discussion forum) what social and cultural factors influence memory.
- Research this topic and gather articles and other resources.
- Create and publish a Google Doc presentation.

DIFFERENCES

- Project lasted three weeks.
- Prompt was scaffolded.
- Used Google Presentations.

Findings

- In 3 out of 7 groups, one person threw out some ideas, which were occasionally discussed for a few turns but were mostly short-circuited and none “brainstormed” in the traditional sense:
 - FIRST POST: I think that some cultural matter influence memory.. like.. for example, people remember things that they see, that doesn't usually happen. Like seeing a unicorn. You may always remember that (except for the fact that it can't happen). [...]
 - RESPONSE: yeah! i think that's really good:) But i think we should divide up the roles and stuff first though. Like who's doing what and etc and then later we can combine?
- In 2 out of 7 groups, members shared a few resources with each other:
 - FIRST POST: I found an article about social factors influencing memory.
- And 2 groups went directly to organization:
 - FIRST POST: Hey guys, I was wondering where we wanted to start on this project, how we wanted to split up the work and exactly how we were going to go about this?

- But because they used Google Presentations, could look not just as how organized themselves (as seen through the discussion forum) but how the project itself evolved (as seen in the document itself).
- Used these to create “discourse maps” for each group.

Data source

Revision 326	8 months ago by Mohamed	Modified 1 slide	Revisions 324-326
Revision 324	8 months ago by Mohamed	Added 1 slide, Modified 3 slides, Deleted 1 slide	Revisions 306-324
Revision 306	8 months ago by Mohamed	Added 2 slides, Modified 4 slides	Revisions 287-306
Revision 287	8 months ago by Mohamed	Added 4 slides, Modified 3 slides	Revisions 268-287
Revision 268	8 months ago by Mohamed	Modified 3 slides	Revisions 266-268
Revision 266	8 months ago by Mohamed	Added 1 slide, Modified 2 slides	Revisions 256-266
Revision 256	8 months ago by Mohamed	Modified 4 slides	Revisions 251-256
Revision 251	8 months ago by Mohamed	Modified 1 slide	
Revision 250	8 months ago by Mohamed	Modified 1 slide	
Revision 249	8 months ago by Mohamed	Modified 1 slide	Revisions 247-249
Revision 247	8 months ago by Mohamed	Modified 10 slides, Changed Theme	Revisions 231-247
Revision 231	8 months ago by Jessy	Modified 3 slides	Revisions 218-231
Revision 218	8 months ago by Jessy	Added 1 slide, Modified 3 slides	Revisions 197-218
Revision 197	8 months ago by Jessy	Added 1 slide, Modified 1 slide	Revisions 176-197
Revision 176	8 months ago by Jessy	Added 2 slides, Modified 1 slide	Revisions 155-176
Revision 155	8 months ago by Jessy	Added 1 slide	Revisions 134-155
Revision 134	8 months ago by Sakura	Modified 3 slides	Revisions 123-134
Revision 123	8 months ago by Sakura	Added 1 slide, Modified 2 slides	Revisions 102-123
Revision 102	8 months ago by Sakura	Added 1 slide, Modified 1 slide	Revisions 81-102
Revision 81	8 months ago by Sakura	Created.	Revisions 0-81

DISCOURSE MAP: SPLIT THE WORK

Set up

Framing (beginning and end)

Social

Cultural

Sakuma	Creates title slide
Sakuma	Creates Cultural slide
Sakuma	Creates Social slide
Sakuma	Creates Conclusion slide
Mohammed	Adds to Conclusion slide
Sakuma	Creates Social subslide
Brittany	Adds text to Cultural slide
Sakuma	Adds text to Social slide
Sakuma	Creates Social subslides
Sakuma	Adds text to Social subslides
Jesse	Creates Cultural subslide
Jesse	Adds text to Cultural subslide
Mohammed	Adds text to Social subslide
Jesse	Creates Cultural subslides
Jesse	Adds text to Cultural subslides
Mohammed	Creates Social subslide
Mohammed	Adds text to Social subslide
Mohammed	Adds to Conclusion

DISCOURSE MAP: SHARE THE WORK

Brittany	Creates title slide
Brittany	Creates Social slide
Brittany	Creates Cultural slide
Coralie	Adds text to Social slide
Coralie	Adds text to Cultural slide
Kari	Creates Intro slide
Kari	Adds text to Intro slide
Kari	Creates Cultural subslides
Kari	Creates Social subslides
Kari	Adds text to Social subslides
Hayden	Adds text to Intro slide
Hayden	Adds text to Social slides
Hayden	Adds text to Cultural slides
Chanutda	Adds text to Cultural slides
Chanutda	Adds text to Social slides
Coralie	Creates Cultural subslides
Coralie	Adds to Cultural subslides
Hayden	Edits and merges

Questions

- Why did one group operate differently from the others?
- Do students learn equally when their work is parallel and cumulative as opposed to synergistic and (truly) jigsaw?
- If we want to provide them with a framework for thinking about a problem, then how do we design projects that prevent them from exercising their natural desire to work in parallel and cumulate results?

References

- Brigid Barron, "Achieving Coordination in Collaborative Problem-Solving Groups," *The Journal of the Learning Sciences* 9 (4), 2000: 403-436.
- Kathleen Hogan, Bonnie K. Nastasi, and Michael Pressley, "Discourse Patterns and Collaborative Scientific Reasoning in Peer and Teacher-Guided Discussions," *Cognition and Instruction* 17 (4), 2000: 379-432.

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